Build your Dream Garage from Quality Garage Plans by Cad Northwest Custom Home Design



Congratulations:

You should have our free 24' X 24' garage plan with loft and are one step closer to enjoying the additional storage space that will result from using these plans. We hope that these plans are the correct size and configuration for your property.

Great

Do you need it larger or would like to relocate windows and doors or do you need something completely different?

No Problem

We can create a custom plan that matches your specifications in a short time and for a reasonable cost. We also have many other pre-designed plans that are displayed on our website. http://www.cadnw.com/ We have many more plans that are not shown on the website. There is a good chance we have one close to your proposed building.

You should be able to see the quality and completeness of our plans. Our purchased plans are equal to these with the exception of being on full size drawing paper. We have reduced this free plan to personal printer size so that you can print them your self.

Your Next step

Call Cad Northwest (503) 625 6330 to order an inexpensive pre-designed plan, a custom plan, to receive a quote, or ask a question. If you find this free garage plan useful then please "like" or "share" our site on Facebook or Google+.

Go to our Facebook Page



Go to our Google+ Page

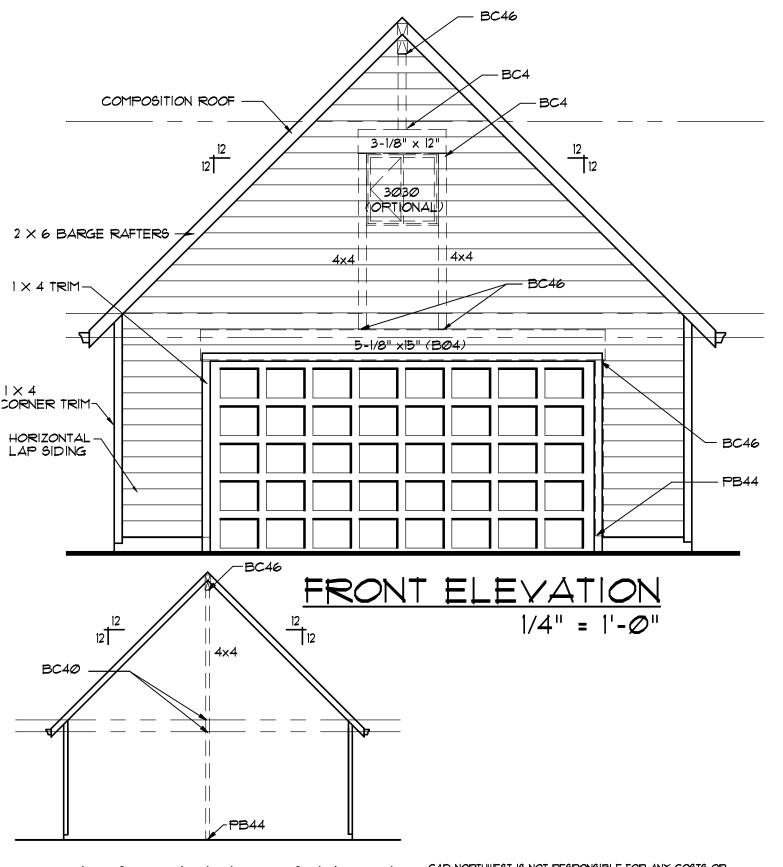


Cad Northwest Custom Home Design

22685 SW Conifer Dr. Sherwood OR 97140 www.cadnw.com cadnw@zzz.com (503) 625 6330

Index

	macx
Page	Title
1	Congratulations
2	Index
3	Front and Rear Elevation
4	Right and Left Elevation
5	Foundation, Floor and Roof Plan
6	Cross Section (Framed Roof Option)
7	Cross Section (Trussed Roof Option)
8	Cross Section (2" x 12" Ridge Option)
9	Typical Wall Detail
10	Alternate Foundation Detail (Single Pour Option)
11	Alternate Roof Detail (Trussed Roof Option)
12	Notes
13	Notes
14	Ridge Beam Calculation
15	Rafter Calculation
16	Floor Joist Calculation (2" x 12" Option)
17	Floor Joist Calculation (Wood I Beam Option)
18	Garage Door Header Calculation
19	Stair Beam Calculation
20	Loft Window Header Calculation
21	Materials List



1/8" = 1'-0"

CAD NORTHWEST IS NOT RESPONSIBLE FOR ANY COSTS OR CHARGES DUE TO ERRORS OR OMMISIONS ON THESE PLANS. YOU ARE ENCOURAGED TO HAVE THESE PLANS EVALUATED FOR YOUR AREA BY A PROFESSIONAL ENGINEER.

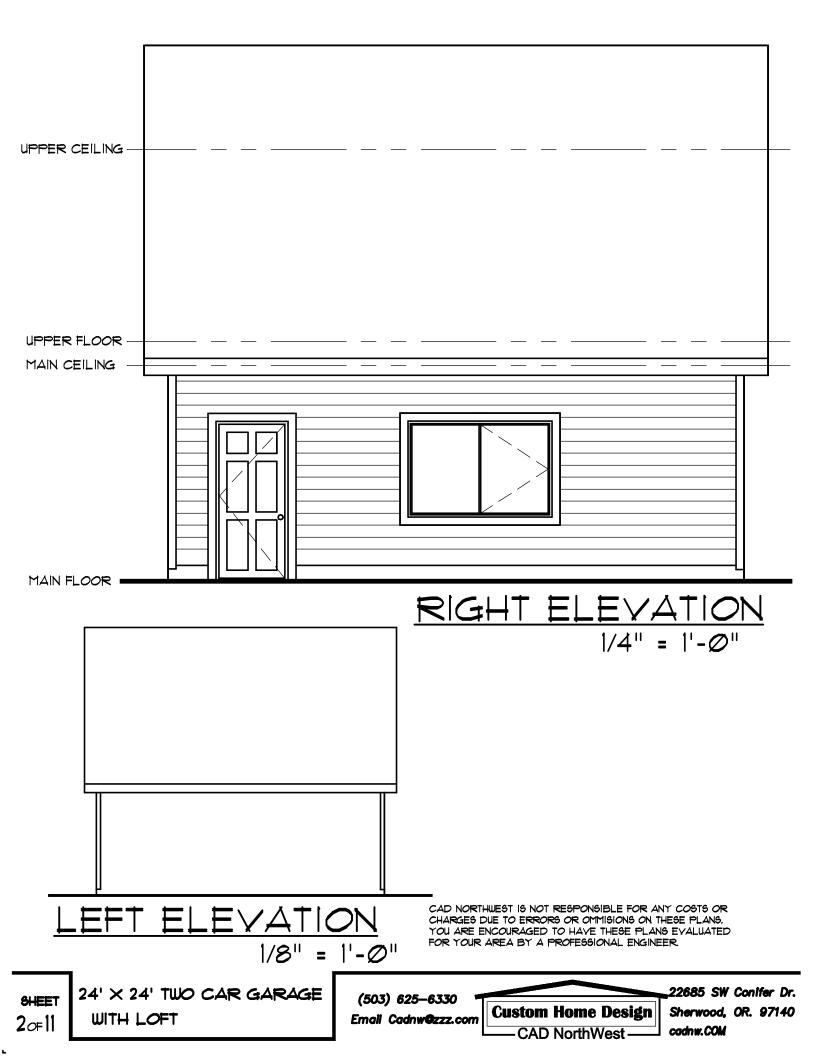
 $24' \times 24'$ TWO CAR GARAGE SHEET WITH LOFT 10=11

Email Cadnw@zzz.com

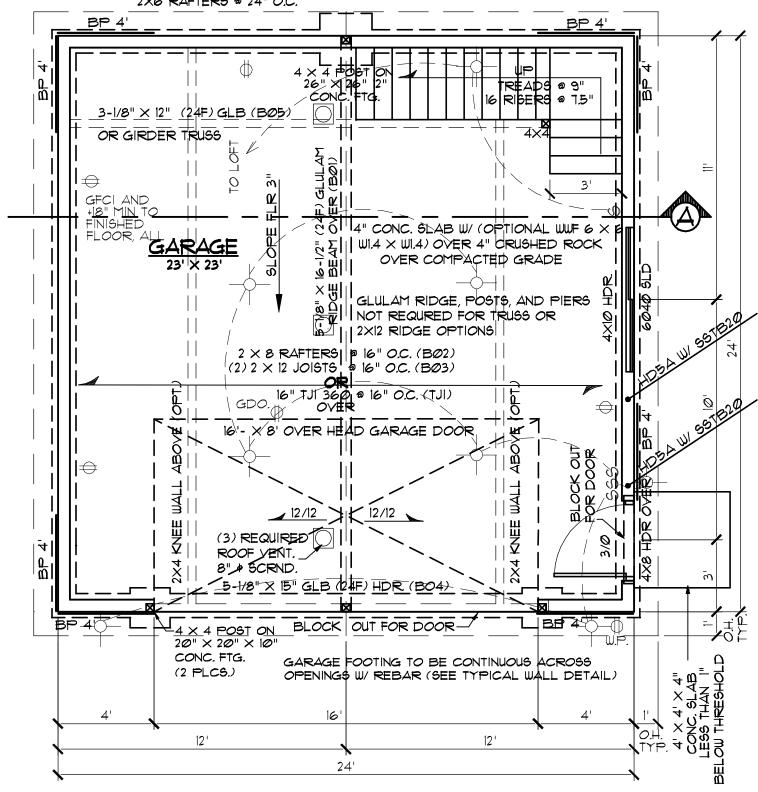
(503) 625-6330

Custom Home Design -CAD NorthWest -

.22685 SW Conifer Dr. Sherwood, OR. 97140 cadnw.COM



TRUSS VERSION LADDER FRAME W/ 2×6 JOISTS @ 16" O.C. 2×6 RAFTERS @ 24" O.C.



OR AND RO

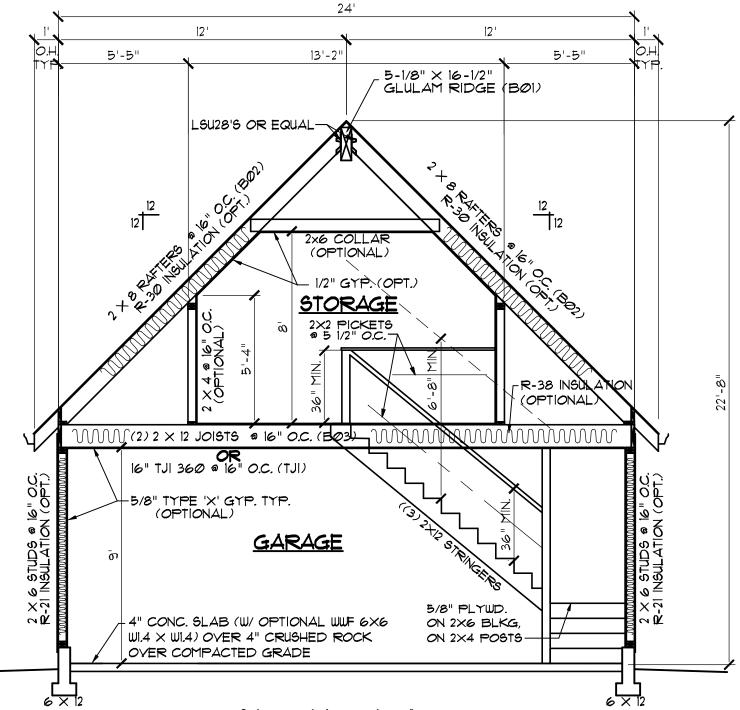
CAD NORTHWEST IS NOT RESPONSIBLE FOR ANY COSTS OR CHARGES DUE TO ERRORS OR OMMISIONS ON THESE PLANS. YOU ARE ENCOURAGED TO HAVE THESE PLANS EVALUATED FOR YOUR AREA BY A PROFESSIONAL ENGINEER.

(503) 625-6330 Email Cadnw@zzz.com **Custom Home Design** CAD NorthWest -

22685 SW Conifer Dr. Sherwood, OR. 97140 cadnw.COM

SHEET 3*o*⊧II

 $24' \times 24'$ TWO CAR GARAGE WITH LOFT



SECTION A

NOTE:
OPTIONAL TRUSSES
MAY BE USED. THIS WILL
ELIMINATE THE GLULAM RIDGE,
RAFTERS, JOISTS,
BEAMS, POSTS, AND
THE GLULAM FOOTINGS.
TRUSS SPECIFICATIONS
ARE PROVIDED BY OTHERS.

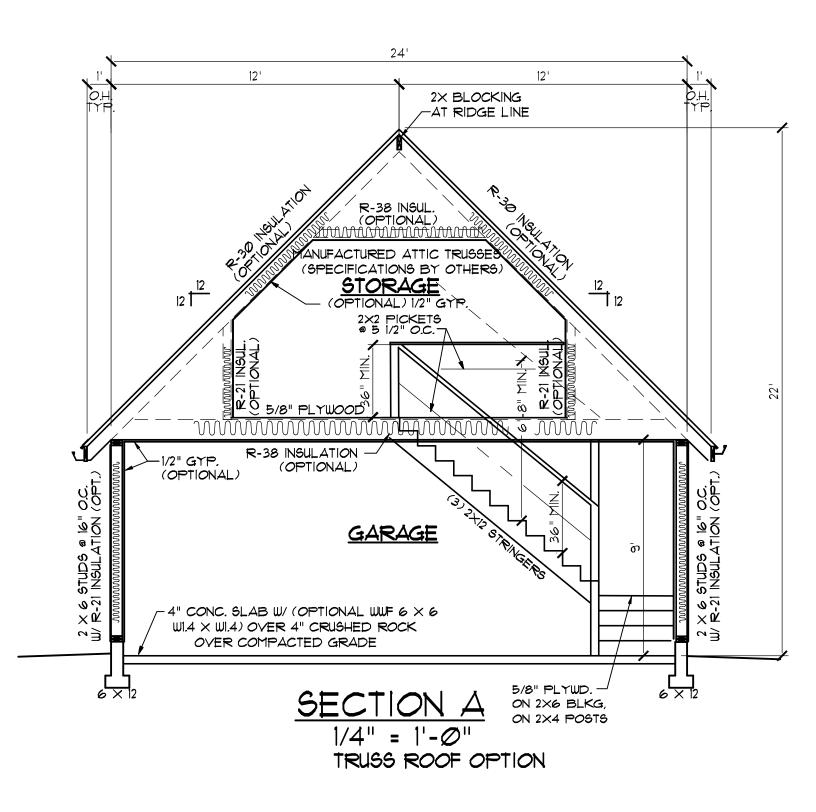
1/4" = 1' - 0"FRAMED ROOF (SUPPORT RIDGE OPTION)

CAD NORTHWEST IS NOT RESPONSIBLE FOR ANY COSTS OR CHARGES DUE TO ERRORS OR OMMISIONS ON THESE PLANS. YOU ARE ENCOURAGED TO HAVE THESE PLANS EVALUATED FOR YOUR AREA BY A PROFESSIONAL ENGINEER.

8HEET 40⊧11 24' imes 24' TWO CAR GARAGE WITH LOFT

(503) 625–6330 Email Cadnw@zzz.com





CAD NORTHWEST IS NOT RESPONSIBLE FOR ANY COSTS OR CHARGES DUE TO ERRORS OR OMMISIONS ON THESE PLANS. YOU ARE ENCOURAGED TO HAVE THESE PLANS EVALUATED FOR YOUR AREA BY A PROFESSIONAL ENGINEER.

22685 SW Conifer Dr.

Sherwood, OR. 97140

cadnw.COM

SHEET 24' X 24' TWO CAR GARAGE

50-11 WITH LOFT

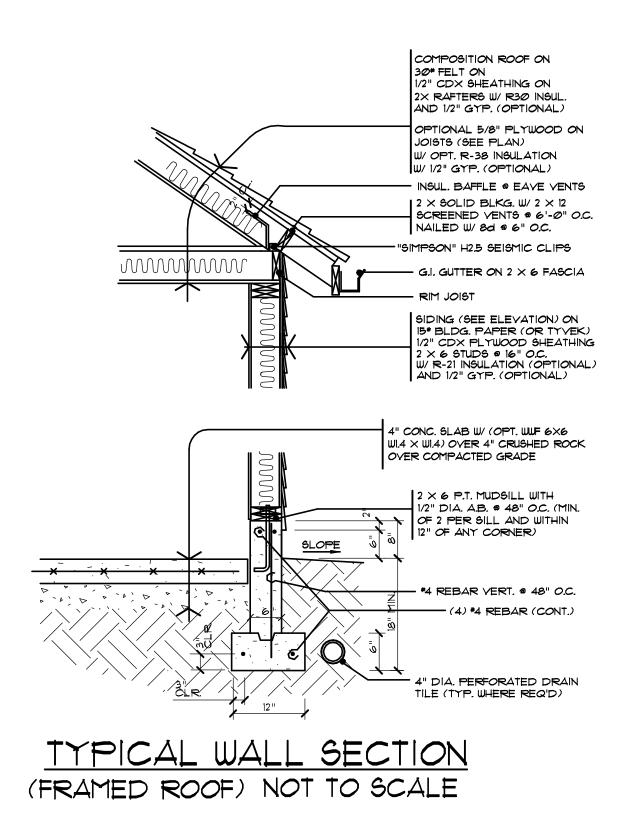


CAD NORTHWEST IS NOT RESPONSIBLE FOR ANY COSTS OR CHARGES DUE TO ERRORS OR OMMISIONS ON THESE PLANS. YOU ARE ENCOURAGED TO HAVE THESE PLANS EVALUATED FOR YOUR AREA BY A PROFESSIONAL ENGINEER.

SHEET $24' \times 24'$ TWO CAR GARAGE WITH LOFT



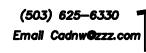
22685 SW Conifer Dr. Sherwood, OR. 97140 cadnw.COM



CAD NORTHWEST IS NOT RESPONSIBLE FOR ANY COSTS OR CHARGES DUE TO ERRORS OR OMMISIONS ON THESE PLANS. YOU ARE ENCOURAGED TO HAVE THESE PLANS EVALUATED FOR YOUR AREA BY A PROFESSIONAL ENGINEER.

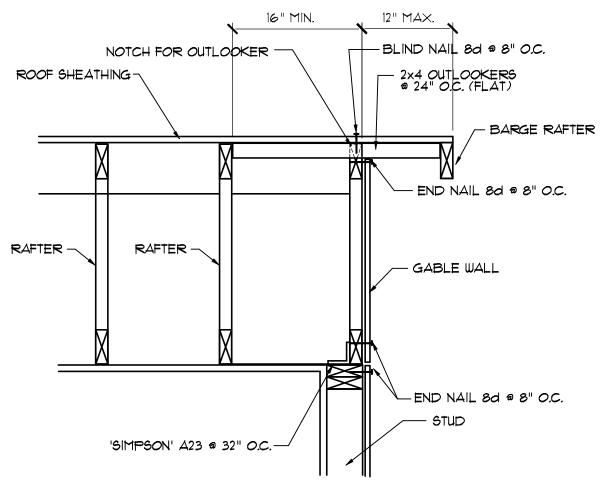
SHEET |

 $24' \times 24'$ TWO CAR GARAGE WITH LOFT



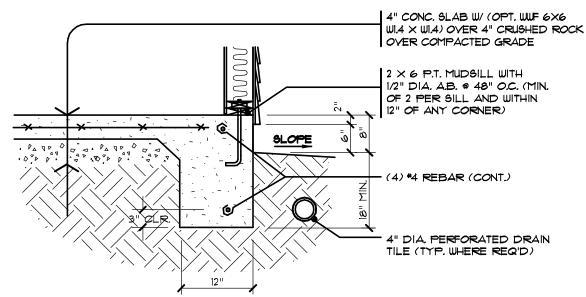


22685 SW Conifer Dr. Sherwood, OR. 97140 cadnw.COM



GABLE END DETAIL

(FRAMED ROOF) AT 6'-0" O.C.



ALTERNATE FOUNDATION SECTION NOT TO SCALE

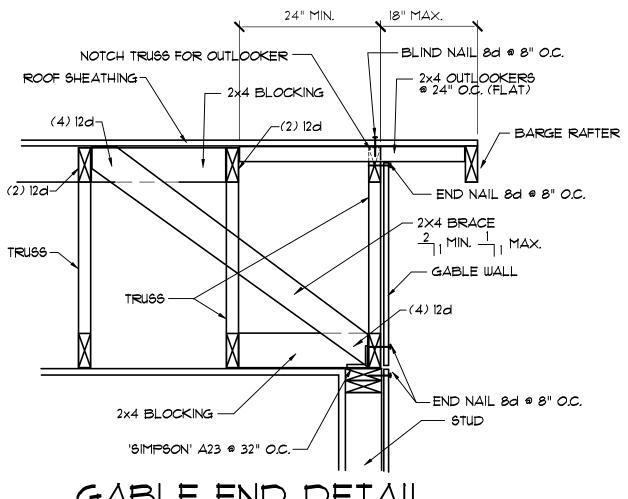
 $24' \times 24'$ TWO CAR GARAGE WITH LOFT

SHEET

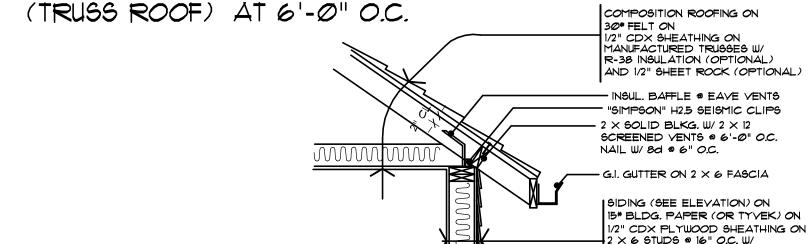
80∓11







GABLE END DETAIL



ALTERNATE ROOF SECTION TO SCALE TO SERVICIO SE

CAD NORTHWEST IS NOT RESPONSIBLE FOR ANY COSTS OR CHARGES DUE TO ERRORS OR OMMISIONS ON THESE PLANS. YOU ARE ENCOURAGED TO HAVE THESE PLANS EVALUATED FOR YOUR AREA BY A PROFESSIONAL ENGINEER.

SHEET 24' X 24' TWO CAR GARAGE
WITH LOFT



_22685 SW Conifer Dr. Sherwood, OR. 97140 cadnw.COM

1/2" SHEET ROCK (OPTIONAL) AND R-21 INSULATION (OPTIONAL)

GENERAL NOTES

- 1. ALL WORK SHALL COMPLY WITH THE INTERNATIONAL RESIDENTIAL CODE (2003 EDITION), ANY APPLICABLE STATE CODES OR AMENDMENTS, AND ALL COUNTY OR LOCAL CODES AND REGULATIONS.
- 2. THE CONTRACTOR IS RESPONSIBLE TO CHECK THE PLANS AND IS TO NOTIFY THE DESIGNER OF ANY ERRORS OR OMISSIONS PRIOR TO THE START OF CONSTRUCTION.
- 3. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. DO NOT SCALE THE DRAWINGS.

4. DESIGN LOADS: ROOF 30 PSF (LIVE LOAD)
FLOOR 40 PSF (LL)
9 TAIRS 100 PSF (LL)
GARAGE FLOOR 50 PSF (2000* PT.)
DECKS 60 PSF (LL)
WIND ≤ 100 MPH
SEISMIC DI

(IF YOUR LOCAL AREA REQUIRES DIFFERENT DESIGN LOADS CONSULT WITH A LOCAL STRUCTURAL ENGINEER TO DETERMINE THE APPROPRIATE REVISIONS.)

5. INSULATION: PATH I

 ROOF (VAULTED)
 R-30

 ROOF (FLAT)
 R-38

 WALL\$ (2X4 EXTERIOR)
 R-13

 WALL\$ (2X6 EXTERIOR)
 R-21

 FLOOR (OVER UNHEATED \$PACE)
 R-25

- 6. THE ABOVE VALUES ARE A MINIMUM AND MAY BE INCREASED IF DESIRED. VERIFY WITH CONTRACTOR.
- T. ALL EXPOSED INSULATION IS TO HAVE A FLAME SPREAD RATING OF LESS THAN 25 AND A SMOKE DENSITY RATING OF LESS THAN 450.
- 8. PROVIDE INSULATION BAFFLES AT EAVE VENTS BETWEEN RAFTERS.
- 9, ROOF VENTS TO TOTAL MORE THAN 1/300 OF THE ATTIC AREA BEING VENTILATED.

STAIR DETAIL

MIN. 3' WIDE 2XIØ TREADS
1.5" RISE ON 2XI2 STRINGERS
ON 4X4 P.T. POSTS ON
METAL BRACKETS ON
16" X 18" DP. CONC. FOOTINGS

PLATFORM MIN. 3' WIDE ON 2X6 JOISTS @ 16" O.C. ON 4X4 P.T. POSTS ON METAL BRACKETS ON 16" X 18" DP. CONC. FOOTINGS

FRAMING NOTES

- 1. ALL EXTERIOR WALL OPENINGS & BEARING WALL OPENINGS TO HAVE 4 X 8 HEADERS UNLESS OTHERWISE INDICATED.
- 2. JOISTS THAT ARE ATTACHED TO FLUSH BEAMS ARE TO BE HUNG WITH "SIMPSON" U-210 OR EQUIV.
- 3. PROVIDE DOUBLE JSTS, UNDER ALL WALLS ABOVE RUNNING PARALLEL TO JOISTS.
- 4. PROVIDE FIREBLOCKING, DRAFTSTOPS & FIRESTOPS AS PER THE I.R.C. (R302.11 AND 302.12)
- 5. LUMBER SPECIES:

A. POSTS, BEAMS, HEADERS

JOISTS AND RAFTERS

B. SILLS, PLATES, BLOCKING
BRIDGING ETC.

C. STUDS

D. POST & BEAM DECKING
E. PLYWOOD SHEATHING
F. GLU-LAM BEAMS

B. SILLS, PLATES, BLOCKING
STUD GRADE DF.
UTILITY GRADE DF.
1/2" CDX PLY, 32/16
Fb-2400, DRY ADH.

NO. 2 DOUGLAS FIR

6. NAILING SCHEDULE: 3-8d TOE NAIL JOIST TO SILL OR GIRDER BRIDGING TO JOIST 2-*8*d TOE NAIL 2-16d BLIND & FACE 2" SUBFLOOR TO GIRDER 16d @ 16" FACE NAIL SOLE PL. TO JOIST TOP PL. TO STUDS 2-16d END NAIL STUD TO SOLE PL. 3-8d TOE NAIL 2-160 TOF NAIL COLL AR TIF RAFTER 3-10d FACE NAIL BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE 3-8d TOE NAIL DOUBLE STUDS 10d @ 24" FACE NAIL 16d @ 16" DOUBLE TOP PL FACE NAIL CONTINUOUS HEADER (2 PC.) 16d @ 16" EDGE NAIL 3-8d TOE NAIL CLG. JST. TO PL. CLG. JST. LAP OVER PL. 3-16d FACE NAIL 3-16d FACE NAIL CLG. JST. TO RAFTER 2-16d TOE NAIL RAFTER TO TOP PL BUILT-UP CORNER STUDS 10d @ 24" FACE NAIL 8d 8 6" EDGE NAIL PLYWOOD SUBFLOOR 8d @ 12" INTERIOR 8d @ 6" EDGE NAIL PLY WALL & ROOF SHEATHING

TOP PL. AT INTERSECTIONS 2-16d FACE NAIL
MULTIPLE JOISTS 10d © 32" STAGGER NAIL
EA. LAYER (UP TO 3) TOP & BOTTOM
MULTIPLE JOISTS (OVER 3) 1/2" DIA. BOLTS W/ WASHERS

EA. SIDE @ 24" O.C. 1 × 6 SPACED SHEATHING: 2-8d FACE NAIL

7. MANUFACTURED TRUSS JOISTS MAY BE SUBSTITUTED FOR $2 \times \text{JOISTS}$ WHERE APPLICABLE.

CAD NORTHWEST IS NOT RESPONSIBLE FOR ANY COSTS OR CHARGES DUE TO ERRORS OR OMMISIONS ON THESE PLANS, YOU ARE ENCOURAGED TO HAVE THESE PLANS EVALUATED FOR YOUR AREA BY A PROFESSIONAL ENGINEER.



FOUNDATION NOTES

- 1. FOOTINGS ARE TO BEAR ON UNDISTURBED LEVEL SOIL DEVOID OF ANY ORGANIC MATERIAL AND STEPPED AS REQUIRED TO MAINTAIN THE REQUIRED DEPTH BELOW THE FINAL GRADE.
- 2. SOIL BEARING PRESSURE ASSUMED TO BE 1500 PSF.
- 3. ANY FILL UNDER GRADE SUPPORTED SLABS TO BE A MINIMUM OF 4" GRANULAR MATERIAL COMPACTED TO 95%.
- 4. CONCRETE: -BASEMENT WALLS & FOUNDATIONS NOT EXPOSED TO WEATHER : 2500 PSI

-BASEMENT & INTERIOR

2,500 PSI

SLABS ON GRADE :

-BASEMENT WALLS & FOUNDATIONS

3,000 PSI EXPOSED TO THE WEATHER:

-PORCHES, STEPS & CARPORT

3,500 PSI SLABS EXPOSED TO WEATHER:

(AS PER I.R.C. TABLE R402.2)

- 5. CONCRETE SLABS TO HAVE CONTROL JOINTS AT 25 FT. (MAXIMUM) INTERVALS EA, WAY,
- 6. CONCRETE SIDEWALKS TO HAVE 3/4 IN. TOOLED JOINTS AT 5 FT. (MINIMUM) O.C.
- 7. REINFORCING STEEL TO BE A-615 GRADE 40. WELDED WIRE MESH TO BE A-185.
- 8. ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED OR PROTECTED WITH 55* ROLL ROOFING.
- 9. FOOTING TO BE CONTINUOUS ACROSS OPENINGS W/ REBAR (SEE TYPICAL WALL DETAIL)
- 10. ALL HOLD DOWN HARDWARE MUST BE SECURED IN PLACE PRIOR TO FOUNDATION INSPECTION.



BRACED WALL PANEL DEFINITION

A BRACED WALL PANEL CONSTRUCTED AS PER 'IRC 2009' (WSP)

BRACE PANEL SHEATHING MIN. TI-11, 3/8 PLYWOOD ONE SIDE NAIL W/8d @ 6" O.C. ON THE EDGES AND 8d @ 12" O.C. IN THE FIELD.

PROVIDE PERIMETER MEMBERS AT OPENINGS. USE EXTERIOR GLUE PLYWOOD. PROVIDE FRAMING MEMBERS OR BLOCKING AT EDGES OF ALL PLYWOOD SHEETS. PROVIDE HOLD DOWNS AT EACH END OF EACH BRACE PANEL. SEE TYPICAL WALL DETAIL.

> CAD NORTHWEST IS NOT RESPONSIBLE FOR ANY COSTS OR CHARGES DUE TO ERRORS OR OMMISIONS ON THESE PLANS. YOU ARE ENCOURAGED TO HAVE THESE PLANS EVALUATED FOR YOUR AREA BY A PROFESSIONAL ENGINEER.

||*o*⊧||

 $24' \times 24'$ TWO CAR GARAGE WITH LOFT

(503) 625–6330 Email Cadnw@zzz.com



22685 SW Conifer Dr. Sherwood, OR. 97140 cadnw.COM

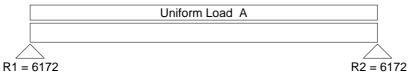


G2424A Garage Plan	Roof Ridge
--------------------	------------

B01					D	ate: 10/16/06	Beam	Chek 2.2
<u>Choice</u>	5-1/8x 16-1/2 GLB 24F-V4 DF/DF				BASE	Fb = 2400	ADJ Fb =	2304
Conditions	DL adj: 12:12 pitch	١,						
	Min Bearing Area	R1= 9.5 i	n ² R2= 9.5 in ²	DL De	fl 0.35	in Suggeste	ed Camber	0.52 in
<u>Data</u>	Beam Span	23.0 ft	Reaction 1		6172#	Reaction 1	LL	3968 #
	Beam Wt per ft	29.06 #	Reaction 2		6172#	Reaction 2	LL	3968 #
	Beam Weight	668 #	Maximum V		6172#			
	Max Moment	35489 '#	Max V (Reduce	ed)	5434#			
	TL Max Defl	L/240	TL Actual Defl	L	/ 283			
	LL Max Defl	L/360	LL Actual Defl	L	/ 439			
<u>Attributes</u>	Section (in³)	Shear (in²)	TL Defl (in)	LL	. Defl			
Actual	232.55	84.56	0.98	C	0.63			
Critical	184.86	42.90	1.15	C).77			
Status	OK	OK	OK	•	OK			
Ratio	79%	51%	85%	8	2%			
		Fb (psi)	Fv (psi)	E (p:	si x mil)	Fc <u>l</u> (_F	osi)	
<u>Values</u>	Base Values	2400	190		1.8	650		
	Base Adjusted	2304	190		1.8	650		
<u>Adjustments</u>	Cv Volume	0.960						
	Cd Duration	1.00	1.00					
	Cr Repetitive							
	Ch Shear Stress							
	Cm Wet Use							

BeamChek has automatically added the beam self-weight into the calculations.

<u>Loads</u> Uniform TL: 508 = A Uniform LL: 345



SPAN = 23 FT

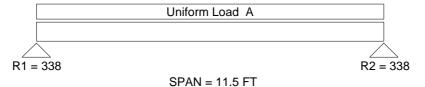
Uniform and partial uniform loads are lbs per lineal ft.



G2424A Garaç	ge Plan		Rafters			
B02				D	ate: 10/16/06	BeamChek 2.2
<u>Choice</u>	2x 8 DF-L #2 @	2 16 in. oc		BASE	Fb = 875	ADJ Fb = 1208
Conditions	Repetitive Use, DL	adj: 12:12 p	oitch, '91 NDS			
	Min Bearing Area	R1= 0.5	in ² R2= 0.5 in ²	DL Defl 0.10	in	
<u>Data</u>	Beam Span	11.5 ft	Reaction 1	338 #	Reaction 1 Ll	_ 230 #
	Beam Wt per ft	0 #	Reaction 2	338 #	Reaction 2 LI	_ 230 #
	Beam Weight	0 #	Maximum V	338 #		
	Max Moment	973 '#	Max V (Reduce	d) 303 #		
	TL Max Defl	L / 240	TL Actual Defl	L / 455		
	LL Max Defl	L/360	LL Actual Defl	L/669		
<u>Attributes</u>	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl		
Actual	13.14	10.88	0.30	0.21		
Critical	9.67	4.78	0.57	0.38		
Status	OK	OK	OK	OK		
Ratio	74%	44%	53%	54%		
		Fb (psi)	Fv (psi)	E (psi x mil)	Fc <u>l</u> (ps	si)
<u>Values</u>	Base Values	875	95	1.6	625	
	Base Adjusted	1208	95	1.6	625	
<u>Adjustments</u>	CF Size Factor	1.200				
	Cd Duration	1.00	1.00			
	Cr Repetitive	1.15				
	Ch Shear Stress					
	Cm Wet Use					
	The began celf				1 D OI	

The beam self-weight was not automatically added to the loads by BeamChek.

<u>Loads</u> Uniform TL: 59 = A Uniform LL: 40



Uniform and partial uniform loads are lbs per lineal ft.



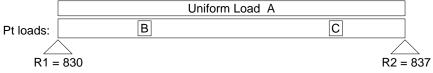
G2424A Garage Plan Upper Floor Joists

OZTZTA Gara	ge i iaii		Opper i loc	001313		
B03				Da	ate: 12/13/05	BeamChek 2.2
<u>Choice</u>	(2) 2x 12 DF-L #	2 @ 16 in.	ос	BASE	Fb = 875	ADJ Fb = 1006
Conditions	Repetitive Use, '91	NDS				
	Min Bearing Area	R1= 1.3 i	n ² R2= 1.3 in ²	DL Defl 0.24	in	
<u>Data</u>	Beam Span	23.0 ft	Reaction 1	830 #	Reaction 1 LL	613#
	Beam Wt per ft	0 #	Reaction 2	837 #	Reaction 2 LL	613 #
	Beam Weight	0 #	Maximum V	837 #		
	Max Moment	4753 '#	Max V (Reduce	d) 774#		
	TL Max Defl	L / 240	TL Actual Defl	L/335		
	LL Max Defl	L/360	LL Actual Defl	L / 469		
<u>Attributes</u>	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl		
Actual	63.28	33.75	0.82	0.59		
Critical	56.68	12.22	1.15	0.77		
Status	OK	OK	OK	OK		
Ratio	90%	36%	72%	77%		
		Fb (psi)	Fv (psi)	E (psi x mil)	Fc <u>l</u> (ps	i)
<u>Values</u>	Base Values	875	95	1.6	625	
	Base Adjusted	1006	95	1.6	625	
<u>Adjustments</u>	CF Size Factor	1.000				
	Cd Duration	1.00	1.00			
	Cr Repetitive	1.15				
	Ch Shear Stress					
	Cm Wet Use					

The beam self-weight was not automatically added to the loads by BeamChek.

Loads

Uniform TL:	67 = A	Uniform LL:	53	
Point TL	Distance			
B = 67	5.75			
C = 67	18 42			



SPAN = 23 FT

Uniform and partial uniform loads are lbs per lineal ft.

22685 S.W. Conifer Dr. Sherwood OR 97140

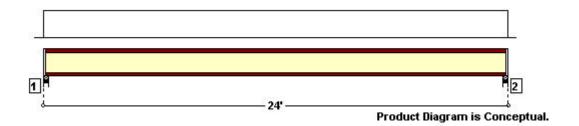
Internet: www.cadnw.com (503) 625-6330 Voice Email: cadnw@zzz.com



16" TJI® 360 @ 16" o/c

User: 2 4/27/2004 10:26:33 AM Page 1 Engine Version: 1.10.3

Beam(TM) 6.10 Serial Number: 7003019 PHIS PRODUCT MEETS OR EXCEEDS THE SET DESIGN CONTROLS FOR THE APPLICATION AND LOADS LISTED



LOADS:

Analysis is for a Joist Member.

Primary Load Group - Residential - Living Areas (psf): 30.0 Live at 100 % duration, 12.0 Dead

SUPPORTS:

		Input Width	-	Vertical Reactions (lbs) Live/Dead/Uplift/Total	Detail	Other
1	Stud wall	3.50"	2.25"	480 / 192 / 0 / 672	A3: Rim Board	1 Ply 1 1/4" x 16" 0.8E TJ-Strand Rim Board®
2	Stud wall	3.50"	2.25"	480 / 192 / 0 / 672	A3: Rim Board	1 Ply 1 1/4" x 16" 0.8E TJ-Strand Rim Board®

⁻See TJ SPECIFIER'S / BUILDERS GUIDE for detail(s): A3: Rim Board

DESIGN CONTROLS:

	Maximum	Design	Control	Control	Location
Shear (lbs)	660	-656	2190	Passed (30%)	Rt. end Span 1 under Floor loading
Vertical Reaction (lbs)	660	660	1202	Passed (55%)	Bearing 2 under Floor loading
Moment (Ft-Lbs)	3893	3893	8405	Passed (46%)	MID Span 1 under Floor loading
Live Load Defl (in)		0.325	0.590	Passed (L/871)	MID Span 1 under Floor loading
Total Load Defl (in)		0.455	1.179	Passed (L/622)	MID Span 1 under Floor loading
TJPro		33	30	Passed	Span 1

⁻Deflection Criteria: STANDARD(LL:L/480,TL:L/240).

TJ-Pro RATING SYSTEM

-The TJ-Pro Rating System value provides additional floor performance information and is based on a GLUED & NAILED 19/32" Panels (20" Span Rating) decking. The controlling span is supported by walls. Additional considerations for this rating include: Ceiling - None. A structural analysis of the deck has not been performed by the program. Comparison Value: 1.88

ADDITIONAL NOTES:

- -IMPORTANT! The analysis presented is output from software developed by Trus Joist (TJ). TJ warrants the sizing of its products by this software will be accomplished in accordance with TJ product design criteria and code accepted design values. The specific product application, input design loads, and stated dimensions have been provided by the software user. This output has not been reviewed by a TJ Associate.
- -Not all products are readily available. Check with your supplier or TJ technical representative for product availability.
- -THIS ANALYSIS FOR TRUS JOIST PRODUCTS ONLY! PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.
- -Allowable Stress Design methodology was used for Building Code IBC analyzing the TJ Distribution product listed above.

PROJECT INFORMATION:

G2424A Garage Plan

OPERATOR INFORMATION:

Tom Easton Cad Northwest

⁻Deflection analysis is based on composite action with single layer of 19/32" Panels (20" Span Rating) GLUED & NAILED wood decking.

⁻Bracing(Lu): All compression edges (top and bottom) must be braced at 2'8" o/c unless detailed otherwise. Proper attachment and positioning of lateral bracing is required to achieve member stability.



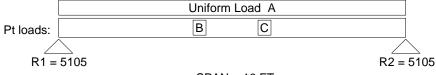
G2424A Garage Plan	Garage Door Header

B04			_		D	ate: 10/16/06	Beam(Chek 2.2	
<u>Choice</u>	5-1/8x 15 GLB 2	4F-V4 DF/D	F		BASE Fb = 2400 ADJ F		ADJ Fb =	b = 2400	
Conditions								J	
	Min Bearing Area	R1= 7.9 i	n ² R2= 7.9 in ²	DL Defl	0.63	in Suggeste	ed Camber	0.95 in	
<u>Data</u>	Beam Span	16.0 ft	Reaction 1	5	105#	Reaction 1 I	LL	320 #	
	Beam Wt per ft	18.68 #	Reaction 2	5	105 #	Reaction 2 I	LL	320 #	
	Beam Weight	299 #	Maximum V	5	105 #				
	Max Moment	31572 '#	Max V (Reduce	ed) 5	005 #				
	TL Max Defl	L / 240	TL Actual Defl	L	293				
	LL Max Defl	L/360	LL Actual Defl	L/>	1000				
<u>Attributes</u>	Section (in³)	Shear (in²)	TL Defl (in)	LL	Defl				
Actual	192.19	76.88	0.66	0.	02				
Critical	157.86	39.51	0.80	0.	53				
Status	OK	OK	OK	C	ΣK				
Ratio	82%	51%	82%	4	%				
		Fb (psi)	Fv (psi)	E (ps	i x mil)	Fc <u>l</u> (p	osi)		
<u>Values</u>	Base Values	2400	190	•	1.8	650			
	Base Adjusted	2400	190	1	1.8	650			
<u>Adjustments</u>	Cv Volume	1.000							
	Cd Duration	1.00	1.00						
	Cr Repetitive								
	Ch Shear Stress								
	Cm Wet Use								

BeamChek has automatically added the beam self-weight into the calculations.

<u>Loads</u>

Uniform TL:	62 = A	Uniform LL:	40	
Point TL	Distance			
B = 4460	6.5			
C = 4460	9.5			



SPAN = 16 FT

Uniform and partial uniform loads are lbs per lineal ft.



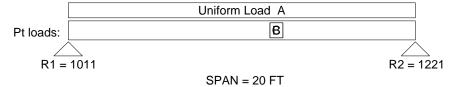
G2424A Garage Plan			Stair Bean	n			
B05				D	ate: 10/16/06	BeamC	Chek 2.2
<u>Choice</u>	3-1/8x 12 GLB 2	24F-V4 DF/D	F	BASE	Fb = 2400	ADJ Fb =	2400
Conditions							
	Min Bearing Area	R1= 1.6 i	n ² R2= 1.9 in ²	DL Defl 0.53	in Suggeste	d Camber	0.80 in
<u>Data</u>	Beam Span	20.0 ft	Reaction 1	1011#	Reaction 1 L	L	400 #
	Beam Wt per ft	9.11 #	Reaction 2	1221 #	Reaction 2 L	L	400 #
	Beam Weight	182 #	Maximum V	1221 #			
	Max Moment	7896 '#	Max V (Reduce	d) 1162#			
	TL Max Defl	L / 240	TL Actual Defl	L/338			
	LL Max Defl	L/360	LL Actual Defl	L/>1000			
<u>Attributes</u>	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl			
Actual	75.00	37.50	0.71	0.18			
Critical	39.48	9.17	1.00	0.67			
Status	OK	OK	OK	OK			
Ratio	53%	24%	71%	27%			
		Fb (psi)	Fv (psi)	E (psi x mil)	Fc <u>l</u> (p	si)	
<u>Values</u>	Base Values	2400	190	1.8	650		
	Base Adjusted	2400	190	1.8	650		
<u>Adjustments</u>	Cv Volume	1.000					
	Cd Duration	1.00	1.00				
	Cr Repetitive						
	Ch Shear Stress						

BeamChek has automatically added the beam self-weight into the calculations.

<u>Loads</u>

Cm Wet Use

	Uniform TL:	50 = A	Uniform LL:	40	
	Point TL	Distance			
•	B = 450	12.0			
	C = 600	12.0			



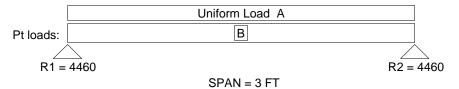
Uniform and partial uniform loads are lbs per lineal ft.



G2424A Garage Plan	Loft Window Hdr

B06				D	ate: 10/16/06	Beam	Chek 2.2
<u>Choice</u>	3-1/8x 12 GLB 2	4F-V4 DF/DI	F	BASE	Fb = 2400	ADJ Fb =	2400
Conditions	DL adj: 12:12 pitch	١,					
	Min Bearing Area	R1= 6.9 ii	n^2 R2= 6.9 in ²	DL Defl 0.01	in Suggeste	d Camber	0.02 in
<u>Data</u>	Beam Span	3.0 ft	Reaction 1	4460 #	Reaction 1 L	L	56 #
	Beam Wt per ft	12.89 #	Reaction 2	4460 #	Reaction 2 L	.L	56 #
	Beam Weight	39 #	Maximum V	4460 #			
	Max Moment	6618 '#	Max V (Reduce	ed) 4396#			
	TL Max Defl	L/240	TL Actual Defl	L/>1000			
	LL Max Defl	L/360	LL Actual Defl	L/>1000			
<u>Attributes</u>	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl			
Actual	75.00	37.50	0.01	<0.01			
Critical	33.09	34.71	0.15	0.10			
Status	OK	OK	OK	OK			
Ratio	44%	93%	9%	0%			
		Fb (psi)	Fv (psi)	E (psi x mil)	Fc <u>l</u> (p	si)	
<u>Values</u>	Base Values	2400	190	1.8	650		
	Base Adjusted	2400	190	1.8	650		
<u>Adjustments</u>	Cv Volume	1.000					
	Cd Duration	1.00	1.00				
	Cr Repetitive						
	Ch Shear Stress						
	Cm Wet Use						
	BeamChek has au	tomatically a	dded the beam	self-weight into	the calculation	ns.	
		-		_			

<u>Loads</u>	Uniform TL:	51 = A	Uniform LL:	37	
	Point TL	Distance			
	B = 8729	1.5			



Uniform and partial uniform loads are lbs per lineal ft.

Custom Home Design CAD NorthWest

MATERIAL LIST

G2424A Garage Plan

Standard W/ Framed Roof

This estimate is designed solely to provide the customer with a rough estimate of the amount of material used in the given project. The material estimate is based on normal and typical building and construction techniques. The actual amount of material used may vary from this estimate due to a number of factors. Consequently, no representation or warranty has been made that the amount of material used will not vary from the estimate.

	ITEM	CALC SIZE		LENGTHO.C.		QTY	
1	MAIN EXT STUDS		2X6	95.13	16"	57	EA
2	UPPER INT PLATES		2X4			144	LF
3	UPPER INT WALL STUDS		2X4	5'	16"	37	EA
4	UPPER CEILING S.R. (Optional)		1/2" GYP.			600	SF
5	UPPER INT WALL S.R. (Optional)		1/2" GYP.			240	SF
6	HEADER, (Ext Main Garage Door)	B04	5-1/8X15 GLB	17'		1	EA
7	HEADER, (Ext Main Door)	N/A	4X8	4'		1	EA
8	HEADER, (Main Window)	N/A	4X10	7'		1	EA
9	HEADER, (Upper Window)	N/A	3-1/8X12 GLB	4'		1	EA
10	RAFTERS	B02	2X8	19'	16"	38	EA
11	EAVE BLOCKING		2X	14.5"	16"	36	EA
12	H2.5 RAFTER TIE				16"	38	EA
13	ROOF SHEATH		1/2" CDX			956	SF
14	ROOF FELT		30# Felt			956	SF
15	ROOFING					956	SF
16	BARGE RAFTERS		2X6	19'		4	EA
17	MAIN EXT WALL S.R. (Optional)		1/2" GYP.			693	SF
18	MAIN CEILING S.R. (Optional)		1/2" GYP.			576	SF
19	EXT WALL SHEATH		1/2" CDX			981	SF
20	EXT WALL VAPOR		15# Felt			981	SF
21	EXT SIDING (See Plan)		Varies			981	SF
22	CONCRETE (Footing)		12" X 6"			1.78	CY
23	CONCRETE (Stem)		6" X 20"			2.96	CY
24	CONCRETE (Floor)		4"			7.11	CY
25	, ,		(1) 48" X 48" X 4" D	P.		0.20	CY
26			(1) 26" X 26" X 12"			0.17	CY
27	CONC. FOOTING, (Garage Door)		(2) 20" X 20" X 10"	DP.		0.17	CY
28	JOISTS	TJI	16 TJI 360	24'	16"	19	EA
29	RIM JOIST					96	LF
30	UPPER FLOOR PLYWOOD		5/8"			576	SF
31	RIDGE BEAM	B01	5-1/8X16-1/2 GLB	24'		1	EA
32	POST	N/A	4X4	8'		2	EA
33	POST	N/A	4X4	8'		2	EA
34	POST	N/A	4X4	4'		1	EA
35	POST	N/A	4X4	9'		1	EA
36	POST	N/A	4X4	11'		1	EA
37	STAIR BEAM	B05	3-1/8X12 GLB	21'		1	EA
38	ANCHOR BOLTS		1/2"		48"	20	EA
39	WIRE MESH		6X6 W1.4 X W1.4			576	SF

22685 S.W. Conifer Dr. Sherwood OR 97140

Internet: www.cadnw.com Email: cadnw@zzz.com (503) 625-6330 Voice